## QC ABSTRACT

**NAME OF WORK:** "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

| SL NO | Item Of Work | Name of Test | Frequency of Test/Quantity | Executed Quantity | Number of Tests Required | Number of Tests Conducted |
|---|---|---|---|---|---|---|
| | | **Materials** | | | | |
| 1 | Cement | Fineness by dry sieving | One Test | | 1 | 1 |
| | | Finess by Air permeablity method | One Test | | 1 | 1 |
| | | Density | One Test | | 1 | 1 |
| | | Standard Consistency | One Test | | 1 | 1 |
| | | Initial Setting time | One Test | | 1 | 1 |
| | | Final Setting time | One Test | | 1 | 1 |
| | | Soundness (Le Chatelier's Method) | One Test | | 1 | 1 |
| | | Compressive Strength | One Test | | 1 | 1 |
| 2 | Coarse aggregate(40 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| 3 | Coarse aggregate(20 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Aggregate crushing Value | One Test | | 1 | 1 |
| | | Aggregate Impact Value | One Test | | 1 | 1 |
| 4 | Fine aggregate | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Material finer than 75 micron | One Test | | 1 | 1 |
| 5 | Steel | Bend test | One Test | | 1 | 1 |
| | | Tensile Test | One Test | | 1 | 1 |
| | | Yield Test | One Test | | 1 | 1 |
| | | ReBend test | One Test | | 1 | 1 |
| 6 | KERB | Core Compressive strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive strength | One Test | | 1 | 1 |
| 7 | Precast (150mm) | Core Compressive Strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive Strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive Strength | One Test | | 1 | 1 |
| 8 | Precast (230mm) | Core Compressive Strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive Strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive Strength | One Test | | 1 | 1 |
| 9 | RCC(M20) | Compressive Strength(7days and 28days) | 6 set /100-150 cum | 107.89 | 12 | 12 |

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** **Date: 26-11-22** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri R Ranganath, No 37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010 |
| **Customer's Reference** | : | BBMP/EE/YNK D/EPMT-09/W O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-11-22 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 269 2015 Ordinary Portland cement Specification ,<br>IS 4031 (Part 4,5) 1988<br>IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4 4<br>IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6<br>IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 24-11-22 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 269:2015 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.46 | _ |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 255.8 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | _ |
| 4 | Standard Consistency (%) | 28.5% | Not specified |
| 5 | Initial Setting time | 175 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 280 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 1mm | Not more than 10 mm |

* The results obtained are satisfactory as per standard requirements.

**Note:**

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** **Date: 26-11-22** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-11-22 |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2021<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 23-11-22 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 234 | 234 | 1.6 | 98.4 | 90-100 |
| 3 | 20 mm | 5334 | 5568 | 37.1 | 62.9 | 30-70 |
| 4 | 10 mm | 4788 | 10356 | 69.0 | 31.0 | 10-35 |
| 5 | 4.75 mm | 4354 | 14710 | 98.1 | 1.9 | 0-5 |
| 6 | Pan | 290 | 15000 | 100.0 | 0 | --- |

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## TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2023-04-11-11 Date: 26-11-22

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 12.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 11.6 | |
| 3 | Specific Gravity | 2.69 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.54 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.58 | – |
| 6 | Water Absorption(%) | 0.24 | – |

* The results obtained are satisfactory as per standard requirements.

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| Lab ID | : | CP-2023-04-11-11 Date: 25-11-22 |
| Customer | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Sub Division, BBMP, Bangalore. |
| Project Name | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| Agency | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| Customer Reference | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 23-11-22 |
| Sample Type/ Size | : | 20mm down size coarse aggregate |
| Reference to BIS codes | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2021<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| Date of test | : | 23-11-22 |

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 245 | 245 | 4.9 | 95.1 | 90-100 |
| 3 | 10 mm | 2675 | 2920 | 58.4 | 41.6 | 25-55 |
| 4 | 4.75 mm | 1798 | 4718 | 94.4 | 5.6 | 0-10 |
| 5 | Pan | 282 | 5000 | 100 | 0 | - |

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# TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2023-04-11-11 Date: 25-11-22

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.4 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 11.2 | |
| 3 | Specific Gravity | 2.64 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.52 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.56 | – |
| 6 | Water Absorption(%) | 0.24 | – |
| 7 | Aggregate crushing Value(%) | 22.6 | Max 30% for Aggregates to be used in concrete for wearing Surface. In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 21.8 | 30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface. |

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# TEST REPORT OF FINE AGGREGATE

| | | |
|---|---|---|
| Lab ID | : | CP-2023-04-11-11 |
| | | Date: 25-11-22 |
| Customer | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Sub Division, BBMP, Bangalore. |
| Project Name | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| Agency | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 23-11-22 |
| Sample Type | : | Fine Aggregate |
| Reference to BIS codes | : | IS 383 : 2016 (Specification for Coarse and fine Aggregates)<br>IS: 2386 :1963(Part - 1, 3) RA2021<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption |
| Date of test | : | 23-11-22 |
| Total weight taken | : | 1000 grams |

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 82 | 82 | 8.2 | 91.8 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 165 | 247 | 24.7 | 75.3 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 177 | 424 | 42.4 | 57.6 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 182 | 606 | 60.6 | 39.4 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 177 | 783 | 78.3 | 21.7 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 134 | 917 | 91.7 | 8.3 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 83 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |

**Result :The tested Sample Conforms to Grading Zone II**

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# TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2023-04-11-11

Date: 25-11-22

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.86 | - |
| 2 | Specific Gravity | 2.59 | - |
| 3 | Material finer than 75 micron(%) | 8.3 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

* The results obtained are satisfactory as per standard requirements.

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## TEST RESULTS OF STEEL

| | | | |
|---|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** | **Date: 24-11-22** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. | |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. | |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" | |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. | |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 | |
| **Source of Sample** | : | Sample supplied by Agency | |
| **Sample Condition** | : | Satisfactory | |
| **Date of Receipt** | : | 23-11-22 | |
| **Sample Type** | : | Sunvik | |
| **Reference to BIS codes** | : | IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2019. | |
| **Date of test** | : | 23-11-22 | |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample | Yield stress | Tensile strength | Elongation | Bend test | Rebend test |
|---|---|---|---|---|---|---|---|---|---|
| | | | (mm) | (kg/m) | (N/mm2) | (N/mm2) | (%) | | |
| 1 | Sunvik | Fe500 | 8 | 0.391 | 512 | 652 | 20.0% | Satisfactory | Satisfactory |
| 2 | Sunvik | Fe500 | 10 | 0.616 | 528 | 672 | 20.0% | Satisfactory | Satisfactory |
| 3 | Sunvik | Fe500 | 12 | 0.888 | 544 | 668 | 20.0% | Satisfactory | Satisfactory |

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# TEST REPORT OF PRECAST COVER SLAB

| | | |
|---|---|---|
| **Lab ID** | : | CP-2023-04-11-11 **Date: 12-12-22** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 07-12-22 |
| **Sample Type /Size** | : | Precast Cover Slab (150mm thick) |
| **Reference to BIS codes** | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete |
| **Date of test** | : | 07/12/2022 |
| **Grade of Slab** | : | M25 |

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | (kg) | (Sq.mm) | (KN) | ($N/mm^2$) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Cover Slab-1 | 77.51 | 150.48 | 2.116 | 4718 | 125.9 | 26.7 | 24.8 | 31.0 |
| 2 | Cover Slab-2 | 77.49 | 150.52 | 2.122 | 4715 | 127.3 | 27.0 | 25.1 | 31.4 |
| 3 | Cover Slab-3 | 77.50 | 150.51 | 2.118 | 4716 | 128.5 | 27.2 | 25.3 | 31.7 |

* The results obtained are satisfactory as per standard requirements

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# TEST REPORT OF PRECAST COVER SLAB

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. **Date: 12-12-22** |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 07-12-22 |
| **Sample Type /Size** | : | Precast Cover Slab (230mm thick) |
| **Reference to BIS codes** | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete |
| **Date of test** | : | 07/12/2022 |
| **Grade of Slab** | : | M25 |

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | (kg) | (Sq.mm) | (KN) | ($N/mm^2$) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Cover Slab-1 | 77.65 | 230.61 | 2.810 | 4735 | 127.9 | 27.0 | 25.1 | 31.4 |
| 2 | Cover Slab-2 | 77.32 | 230.42 | 2.824 | 4695 | 129.3 | 27.5 | 25.6 | 32.0 |
| 3 | Cover Slab-3 | 77.75 | 230.82 | 2.815 | 4747 | 128.5 | 27.1 | 25.2 | 31.5 |

* The results obtained are satisfactory as per standard requirements

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R RUDRAPRASAD
Authorized Signatory
Technical Manager



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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST REPORT OF CEMENT CONCRETE KERB STONE

Format No: CP/TF/01

| | | |
|---|---|---|
| Lab ID | : | CP-2023-04-11-11 |
| Customer | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. **Date: 12-12-22** |
| Address | : | Yelahanka Sub Division, BBMP, Bangalore. |
| Project Name | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| Agency | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 07-12-22 |
| Sample Type /Size | : | CC Kerb Stone/ 450*165*400mm |
| Reference to BIS codes | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete |
| Date of test | : | 07/12/2022 |
| Grade of Kerb | : | M20 |

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | Kg | (Sq.mm) | (KN) | (N/mm2 ) | (N/mm2 ) | (N/mm2 ) |
| 1 | A | 77.01 | 165.51 | 2.864 | 4657 | 102.1 | 21.9 | 21.9 | 27.4 |
| 2 | B | 77.03 | 165.49 | 2.793 | 4659 | 105.2 | 22.6 | 22.6 | 28.2 |
| 3 | C | 77.04 | 165.50 | 2.815 | 4661 | 100.5 | 21.6 | 21.6 | 27.0 |

* The results obtained are satisfactory as per standard requirements.

Note:

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

**Lab ID** : CP-2023-04-11-11

**Date: 13/12/2022**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri. R Ranganath, No 37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010

**Customer's Reference** : BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 08-12-22

**Customer ID** : Drain Raft Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 13/12/2022

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (mm) | (Sq.mm) | (kg) | (KN) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Drain Raft Concrete | M20 | 06/12/2022 | 13/12/2022 | 149.58 X 150.82 X 150.81 | 22559 | 8.168 | 425.7 | 18.9 | 18.4 |
| 2 | Drain Raft Concrete | M20 | 06/12/2022 | 13/12/2022 | 151.98 X 150.45 X 151.16 | 22865 | 8.887 | 413.1 | 18.1 | |
| 3 | Drain Raft Concrete | M20 | 06/12/2022 | 13/12/2022 | 149.05 X 149.91 X 150.62 | 22344 | 8.792 | 407.2 | 18.2 | |

* The results obtained are satisfactory as per standard requirements

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Date: 03/01/2023**

| | | |
|---|---|---|
| **Lab ID** | : | CP-2023-04-11-11 |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 08-12-22 |
| **Customer ID** | : | Drain Raft Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 28 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 03/01/2023 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Raft Concrete | M20 | 06/12/2022 | 03/01/2023 | 149.73 X 151.38 X 150.33 | 22665 | 8.901 | 534.2 | 23.6 | 23.2 |
| 2 | Drain Raft Concrete | M20 | 06/12/2022 | 03/01/2023 | 150.84 X 149.85 X 149.03 | 22603 | 8.980 | 516.8 | 22.9 | |
| 3 | Drain Raft Concrete | M20 | 06/12/2022 | 03/01/2023 | 149.05 X 151.62 X 150.20 | 22598 | 8.571 | 520.9 | 23.1 | |

* The results obtained are satisfactory as per standard requirements

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

**Lab ID** : **CP-2023-04-11-11**

**Date: 16/12/2022**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010.

**Customer's Reference** : BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 12-12-22

**Customer ID** : Drain Side Wall Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 16/12/2022

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 151.80 X 149.71 X 151.84 | 22726 | 8.712 | 413.3 | 18.2 | 18.2 |
| 2 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 149.23 X 149.08 X 149.60 | 22248 | 8.698 | 400.9 | 18.0 | |
| 3 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 150.28 X 150.78 X 151.74 | 22659 | 8.466 | 419.8 | 18.5 | |

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Technical Manager


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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Date: 16/12/2022**

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** |
| **Customer** | : | Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 12-12-22 |
| **Customer ID** | : | Drain Side Wall Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 16/12/2022 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 151.93 X 150.46 X 151.65 | 22859 | 8.414 | 421.1 | 18.4 | 18.5 |
| 2 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 151.05 X 151.26 X 150.61 | 22848 | 8.758 | 427.1 | 18.7 | |
| 3 | Drain Side Wall Concrete | M20 | 09/12/2022 | 16/12/2022 | 150.64 X 151.85 X 151.35 | 22876 | 8.545 | 420.5 | 18.4 | |

* The results obtained are satisfactory as per standard requirements.

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| Lab ID | : | CP-2023-04-11-11 |
| Customer | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Sub Division, BBMP, Bangalore. |
| Project Name | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" |
| Agency | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-09/W O/88/2022-23 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 12-12-22 |
| Customer ID | : | Drain Side Wall Concrete |
| Sample Type /Size | : | 150X150X150 mm |
| Sample grade/Age | : | M20 / 28 Days Compressive Strength |
| Reference to BIS codes | : | IS. 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5 |

**Date: 06/01/2023**

**Date of test** : 06/01/2023

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (mm) | (Sq.mm) | (kg) | (KN) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Drain Side Wall Concrete | M20 | 09/12/2022 | 06/01/2023 | 150.29 X 149.07 X 150.78 | 22403 | 8.429 | 531.3 | 23.7 | 23.3 |
| 2 | Drain Side Wall Concrete | M20 | 09/12/2022 | 06/01/2023 | 149.05 X 150.80 X 150.64 | 22476 | 8.563 | 508.7 | 22.6 | |
| 3 | Drain Side Wall Concrete | M20 | 09/12/2022 | 06/01/2023 | 150.87 X 151.34 X 151.47 | 22832 | 8.521 | 541.1 | 23.7 | |

* The results obtained are satisfactory as per standard requirements.

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : CP-2023-04-11-11 **Date: 22/12/2022**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010

**Customer's Reference** : BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 17-12-22

**Customer ID** : Culvert Raft Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 22/12/2022

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (mm) | (Sq.mm) | (kg) | (KN) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Culvert Raft Concrete | M20 | 15/12/2022 | 22/12/2022 | 149.03 X 150.11 X 150.68 | 22372 | 8.642 | 405.5 | 18.1 | 18.1 |
| 2 | Culvert Raft Concrete | M20 | 15/12/2022 | 22/12/2022 | 150.22 X 151.00 X 149.55 | 22683 | 8.369 | 414.8 | 18.3 | |
| 3 | Culvert Raft Concrete | M20 | 15/12/2022 | 22/12/2022 | 150.89 X 151.39 X 151.54 | 22843 | 8.618 | 411.7 | 18.0 | |

* The results obtained are satisfactory as per standard requirements

**Note:**

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : CP-2023-04-11-11 **Date: 12/01/2023**

**Customer** : Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010.

**Customer's Reference** : BBMP/EE/YNK D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 17-12-22

**Customer ID** : Culvert Raft Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS. 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 12/01/2023

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Raft Concrete | M20 | 15/12/2022 | 12/01/2023 | 151.87 X 150.83 X 150.22 | 22906 | 8.325 | 536.5 | 23.4 | 23.0 |
| 2 | Culvert Raft Concrete | M20 | 15/12/2022 | 12/01/2023 | 151.08 X 151.49 X 151.96 | 22887 | 8.409 | 519.3 | 22.7 | |
| 3 | Culvert Raft Concrete | M20 | 15/12/2022 | 12/01/2023 | 151.25 X 150.33 X 150.33 | 22737 | 8.488 | 523.0 | 23.0 | |

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : CP-2023-04-11-11 **Date: 26/12/2022**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010.

**Customer's Reference** : BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 21-12-22

**Customer ID** : Culvert Side Wall Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl 5

**Date of test** : 26/12/2022

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 26/12/2022 | 150.38 X 151.04 X 151.17 | 22713 | 8.856 | 428.4 | 18.9 | 18.6 |
| 2 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 26/12/2022 | 149.18 X 149.47 X 150.47 | 22297 | 8.447 | 408.2 | 18.3 | |
| 3 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 26/12/2022 | 151.61 X 151.93 X 149.06 | 23034 | 8.161 | 426.5 | 18.5 | |

* The results obtained are satisfactory as per standard requirements.

**Note:**

The results pertain to the samples received and tested.
All information furnished by Agency/Representative
Any correction in the report will make this report invalid
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Samples will be disposed after 30 days from the date of issue of test certificate

A.E.E

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R RUDRAPRASAD
Authorized Signatory
Technical Manager


****End of Report****

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
WATER TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

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AN ISO 9001 : 2008 COMPANY & ACCREDITED LABORATORY AS PER ISO/IEC 17025:2017
# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : CP-2023-04-11-11 **Date: 16/01/2023**

**Customer** : Assistant Executive Engineer,Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division"

**Agency** : Sri. R Ranganath, No 37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010.

**Customer's Reference** : BBMP/EE/YNK D/EPMT-09/W.O/88/2022-23

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 21-12-22

**Customer ID** : Culvert Side Wall Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl 5

**Date of test** : 16/01/2023

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 16/01/2023 | 151.81 X 150.86 X 149.59 | 22902 | 8.165 | 543.6 | 23.7 | 23.4 |
| 2 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 16/01/2023 | 150.10 X 150.76 X 150.40 | 22628 | 8.457 | 520.0 | 23.0 | |
| 3 | Culvert Side Wall Concrete | M20 | 19/12/2022 | 16/01/2023 | 149.83 X 150.21 X 150.40 | 22506 | 8.278 | 530.1 | 23.6 | |

* The results obtained are satisfactory as per standard requirements

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

| | | | |
|---|---|---|---|
| **Lab ID** | : | **CP-2023-04-11-11** | **Date: 21/01/2023** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. | |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. | |
| **Project Name** | : | "Providing footpath Railings at Raithara santhe road in Kempegowda ward no-01 of Yelahanka Sub Division" | |
| **Agency** | : | Sri. R Ranganath, No.37, 19th Cross, 1st 'N' Block, Rajajinagara, Mahalakshmipuram, Bangalore-560010. | |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-09/W.O/88/2022-23 | |
| **Source of Sample** | : | Sample supplied by Agency | |
| **Sample Condition** | : | Satisfactory | |
| **Date of Receipt** | : | 26-12-22 | |
| **Customer ID** | : | Coping Concrete for MS Rod | |
| **Sample Type /Size** | : | 150X150X150 mm | |
| **Sample grade/Age** | : | M20 / 28 Days Compressive Strength | |
| **Reference to BIS codes** | : | IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5 | |
| **Date of test** | : | 21/01/2023 | |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Coping Concrete for MS Rod | M20 | 24/12/2022 | 21/01/2023 | 150.01 X 149.37 X 149.85 | 22407 | 8.174 | 532.2 | 23.8 | 23.4 |
| 2 | Coping Concrete for MS Rod | M20 | 24/12/2022 | 21/01/2023 | 150.85 X 151.65 X 149.14 | 22877 | 8.202 | 520.5 | 22.8 | |
| 3 | Coping Concrete for MS Rod | M20 | 24/12/2022 | 21/01/2023 | 150.69 X 149.86 X 149.35 | 22582 | 8.340 | 537.0 | 23.8 | |

* The results obtained are satisfactory as per standard requirements

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